

1 **BEFORE THE BOARD OF ENVIRONMENTAL REVIEW**
2 **OF THE STATE OF MONTANA**

3 **IN THE MATTER OF THE**
4 **AIR QUALITY PERMIT FOR THE**
5 **ROUNDUP POWER PROJECT**
6 **(PERMIT NO. 3182-00)**

Case No. 2003-04 AQ

7 **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER**

8 1. The Board of Environmental Review conducted the
9 contested case hearing in the above-captioned matter on
10 June 4-6, 2003.

11 2. To the extent the following Findings of Fact may
12 be deemed to be Conclusions of Law, they are incorporated
13 by reference in the Conclusions of Law. To the extent
14 that the following Conclusions of Law may be deemed to be
15 Findings of Fact, they are incorporated by reference in
16 the Findings of Fact. References to testimony and
17 exhibits are intended to be helpful, but are not intended
18 to list all possible relevant references.

19 3. The original Affidavit and Petition for Hearing
20 in this matter contained 73 numbered paragraphs. During
21 the contested case process, various paragraphs were
22 withdrawn or addressed by stipulation of the parties or
23 decided on motion for partial summary judgment. This
24 decision addresses those paragraphs that remained for
25 decision by the Board after the receipt of evidence at the
26 contested case hearing.

27 **UNCONTESTED FACTS**

1 4. On January 14, 2002, Bull Mountain Development
2 Company No. 1, LLC, ("Bull Mountain") submitted an
3 application to the Department of Environmental Quality
4 ("Department") for an air quality permit for a nominal
5 780-megawatt pulverized coal-fired electrical power
6 generation plant ("the Roundup Power Project" or "the
7 Project") to be located in Musselshell County, Montana,
8 approximately 12 miles south-southeast of Roundup and
9 approximately 35 miles north of Billings.

10 5. As part of the permit application process, Bull
11 Mountain published a public notice of the application in
12 the Billings Gazette on January 18, 2002, and in the
13 Roundup Record-Tribune and The Winnet Times on January 23,
14 2002.

15 6. Bull Mountain subsequently submitted supplemental
16 information to the Department, and the Department deemed
17 the permit application complete as of July 22, 2002.

18 7. Bull Mountain designed the proposed Project to be
19 a "mine-mouth" electrical generating facility that would
20 use coal from the existing Bull Mountains Mine located
21 adjacent to the proposed site for the Project.

22 8. The primary air pollutant emitting equipment
23 associated with the Project would be two main boilers
24 that, primarily, would be fired by coal.

25 9. The area where the Project would be located is
26 designated as "unclassifiable/attainment" for the ambient
27 air quality standards. The formal designation is

1 Prevention of Significant Deterioration of Air Quality
2 (PSD) Class II.

3 10. On March 16, 2002, the Billings Gazette
4 published a notice that the Department would accept
5 comments from the public until April 19, 2002, on the
6 scope of the environmental impact statement (EIS) for the
7 Project.

8 11. On April 4, 2002, the Department conducted a
9 public scoping meeting in Roundup to accept comments from
10 the public on the Project.

11 12. On August 12, 2002, the Department issued a
12 Preliminary Determination (PD) on the permit application.

13 13. The Department specified in the cover letter for
14 the PD that comments on the PD were due to the Department
15 by August 27, 2002.

16 14. On September 13, 2002, the Department notified
17 both of the Petitioners that the Department would accept
18 comments on the draft EIS and on the PD until the end of
19 the public comment period on the draft EIS (DEIS).

20 15. On November 18, 2002, the Department issued a
21 DEIS for the Project, which included the PD.

22 16. The Department specified in the DEIS that the
23 Department would accept comments on the DEIS, which
24 included the PD, postmarked no later than December 18,
25 2002.

26 17. On December 5, 2002, the Department conducted a
27 public hearing in Roundup to accept comments concerning

1 the DEIS, which included the PD.

2 18. On January 10, 2003, the Department issued a
3 final EIS for the Project.

4 19. On January 31, 2003, the Department issued a
5 Record of Decision and the Department Decision (DD) on the
6 permit application.

7 20. The DD proposed granting the permit with
8 conditions.

9 21. Among other conditions in the permit, the DD
10 includes the following emission limits applicable to the
11 main boilers (opacity limits and emission limits apply to
12 each boiler separately, except that caps apply to the sum
13 of the emissions from both boilers; conditions specified
14 in the PD that were different from the conditions in the
15 DD are shown in brackets):

16 a. Opacity: 20%, Section II.A.1.

17 b. Coal Feed Rate and Heat Input: Rolling 12-month
18 limits on coal feed rate and heat input, Sections
II.A.4 and 5.

19 c. Nitrogen Oxides (NOx): 401.3 pounds per hour
20 (lb/hr) (0.10 pounds per million British Thermal Unit
heat input (lb/MMBtu)), based on 1-hour average,
21 Section II.A.6; 280.9 lb/hr (0.07 lb/MMBtu) based on
a rolling 24-hour average, Section II.A.7; 2,291.5
22 tons per rolling 12-month period cap, Section II.A.8.
[PD - 261.6 lb/hr (0.07 lb/MMBtu), based on a
23 rolling 30-day average, Section II.A.6.]

24 d. Carbon Monoxide (CO): 602.0 lb/hr (0.15
lb/MMBtu), Section II.A.9; 4,910.4 tons per rolling
25 12-month period cap, Section II.A.10. [PD - 560.6
lb/hr (0.15 lb/MMBtu), Section II.A.7.]

26 e. Sulfur Dioxide (SO2): 602.0 lb/hr (0.15
27 lb/MMBtu), based on 1-hour average, Section II.A.11;
481.6 lb/hr (0.12 lb/MMBtu), based on a rolling 24-

1 hour average, Section II.A.12; 3,928.3 tons per
2 rolling 12-month period cap, Section II.A.14. [PD -
448.4 lb/hr (0.12 lb/MMBtu), based on a rolling 30-
day average, Section II.A.8.]

3 f. Particulate Matter with an aerodynamic diameter
4 less than or equal to 10 micrometers (PM-10): 60.2
5 lb/hr (0.015 lb/MMBtu), Section II.A.15.a;
6 feasibility of changing the limit to 48.2 lb/hr
7 (0.012 lb/MMBtu) to be determined within 18 months
based upon the first source tests, Section II.A.15.b;
491.0 tons per rolling 12-month period cap, Section
II.A.16. [PD - 56.1 lb/hr (0.015 lb/MMBtu), Section
II.A.9.]

8 g. Volatile Organic Compounds (VOCs): 12.0 lb/hr
9 (0.0030 lb/MMBtu), Section II.A.17; 98.2 tons per
10 rolling 12-month period cap, Section II.A.18. [PD -
11.2 lb/hr (0.0030 lb/MMBtu), Section II.A.10.]

11 22. The Department based the 1-hour average NOx and
12 SO2 emission limits in the DD on air quality computer
13 dispersion modeling submitted to the Department by the
14 permit applicant on November 20, 2002.

15 23. An SO2 emission limit of 481.6 lb/hr for each of
16 the Project's two main boilers was used in the computer
17 dispersion modeling of SO2 impacts conducted for purposes
18 of predicting compliance with 24-hour ambient air quality
19 standards and PSD increments. An SO2 emission limit of
20 602.0 lb/hr for each of the Project's two main boilers was
21 used in the computer dispersion modeling of SO2 impacts
22 conducted for purposes of predicting compliance with 1-
23 hour and 3-hour ambient air quality standards and PSD
24 increments.

25 24. The DD requires the following control
26 technology:
27

1 a. NOx: Low-NOx burners (LNB), overfire air (OFA),
2 and selective catalytic reduction (SCR) "or an
equivalent control technology." Section II.A.6.

3 b. SO2: Dry flue gas desulfurization (FGD) system
4 "or an equivalent control technology." Section
II.A.11.

5 c. PM-10: Fabric filter baghouse "or an equivalent
control technology." Section II.A.15.

6 d. Sulfuric Acid Mist (H2SO4): Dry FGD "or an
7 equivalent control technology." Section II.A.19.

8 25. The DD requires a minimum control efficiency of
9 90%, based on a rolling 30-day average, for the SO2
10 emission control equipment. Section II.A.13.

11 26. On December 18, 2002, the Department received a
12 letter from Craig Manson, Assistant Secretary for Fish and
13 Wildlife, U.S. Department of Interior, dated December 18,
14 2002, and an enclosed "Determination of Adverse Impact to
15 Visibility at Yellowstone National Park and UL Bend
16 Wilderness Area for the Roundup Power Project," dated
17 December 2, 2002. The letter and enclosure are referred
18 to below as "the December 18, 2002, FLM letter."

19 27. On December 30, 2002, Bull Mountain submitted to
20 the Department an analysis of each day of modeled
21 visibility impact.

22 28. On January 10, 2003, Craig Manson, Assistant
23 Secretary for Fish, Wildlife and Parks, U.S. Department of
24 Interior, sent the Department a letter stating, "I hereby
25 withdraw my determination of adverse impact on related air
26 quality values, including visibility, for [Yellowstone
27

1 National Park] and [UL Bend] caused by operations of the
2 proposed [Roundup Power Plant]."

3 29. In reviewing Bull Mountain's permit application,
4 the Department accepted four months of on-site SO2
5 monitoring data collected by Bull Mountain from January
6 2002 through July 2002. The permit applicant continued to
7 collect SO2 monitoring data as the permit process
8 proceeded and is still collecting the data.

9 30. In 1996, the Board of Environmental Review
10 adopted ARM 17.8.705(1)(r), now ARM 17.8.745, allowing "de
11 minimis" exemptions from the requirement to obtain an air
12 quality preconstruction permit for construction or changed
13 conditions of operation at a facility for which an air
14 quality permit has been issued that do not increase the
15 facility's potential to emit by more than 15 tons per year
16 of any air pollutant. 1996 MAR 2293 (August 22, 1996).

17 31. Section III.H of the DD for the Project states
18 that: "Construction must begin within 18 months of permit
19 issuance and proceed with due diligence until the project
20 is complete or the permit shall be revoked (ARM
21 17.8.731)." Section III.H. of the PD stated that:
22 "Construction must begin within 3 years of permit issuance
23 and proceed with due diligence until the project is
24 complete or the permit shall be revoked (ARM 17.8.731)."

25 FINDINGS AND CONCLUSIONS

26 32. **Petition ¶¶ 18, 41.**

27 a. **Findings of Fact.** A difference between the PD

1 and DD, is that the phrase "or an equivalent control
2 technology" was added by the Department to Sections
3 II.A.6, 11, 15, 19 of the DD pertaining to operational and
4 emission limitations. Uncontested Fact ¶ 24; Department's
5 Exhibit (DE) 113; DE 127. This language was not added at
6 the request of Bull Mountain. Test. Dickey. Instead, the
7 Department added this language so that changes could be
8 made to the permit without going through the amendment
9 process. Test. Klemp; Test. Walsh. Because this language
10 did not appear in the PD, the public did not have an
11 opportunity to comment upon this language. In addition,
12 different control technologies may meet the same emissions
13 limitations but have different air quality impacts. Test.
14 Koucky. Therefore, the Board finds that the addition of
15 this language was a material change and interested persons
16 did not have an adequate opportunity to comment upon it.

17 **b. Conclusions of Law.** The permitting process
18 requires reasonable notice of the subjects and issues
19 involved and an opportunity to comment. Mont. Code Ann. §
20 75-2-211(3)(c); ARM 17.8.720 (through 12/30/02); ARM
21 17.8.759, 17.8.760 (12/31/02).

22 **c. Decision.** The Board directs the Department to
23 remove the phrase "or an equivalent control technology"
24 from Sections II.A.6, 11, 15, 19 of the Final Permit (FP).

25 **33. Petition ¶ 20.**
26
27

1 a. **Findings of Fact.** Petitioners claim that the
2 public did not have an opportunity to review data
3 pertaining to the impact on visibility in Class I areas.

4 (1) Bull Mountain's permit application identified
5 potential air quality impacts of the Project. Test.
6 Klemp; Test. McVehil; Bull Mountain Exhibit (BME) 201 App.
7 F. The Department issued the PD on August 12, 2002.

8 Uncontested Fact ¶ 12. The deadline for comments on the
9 PD was December 18, 2002. Uncontested Fact ¶ 16. The
10 Petitioners submitted comments to the Department by letter
11 dated December 18, 2002, including comments about
12 visibility impacts in Class I areas. DE 118; Test. Walsh.

13 The Department received the December 18, 2002, FLM letter
14 on that date. Uncontested Fact ¶ 26. The December 18,
15 2002, FLM letter included the statement, "RPP is a modern,
16 well-planned facility. It will be cleaner than nearly all
17 of its predecessors." DE 119. The enclosure to the
18 December 18, 2002, FLM letter entitled, "Determination of
19 Adverse Impact to Visibility at Yellowstone National Park
20 and UL Bend Wilderness Area for the Roundup Power
21 Project," identified four separate written comment letters
22 submitted by FLM to the Department between February 19,
23 2002, and November 6, 2002. The Department facilitated
24 many discussions between the FLM and Bull Mountain. The
25 public had access to the Department's file throughout this
26 process. Test. Klemp.

1 (2) The December 18, 2002, FLM letter did not include
2 a case-by-case analysis of the days upon which the FLM
3 determined that an adverse impact on visibility would
4 occur. DE 119. The document used by FLM to evaluate air
5 quality impacts, including visibility, is the Federal Land
6 Managers' Air Quality Related Values Workgroup (FLAG)
7 Phase I Report, December 2000. DE 104; Test. Klemp. With
8 respect to an adverse impact on visibility, the FLAG
9 Report states, "This determination must be made on a case-
10 by-case basis taking into account the geographic extent,
11 intensity, duration, frequency and time of visibility
12 impairments, and how these factors correlate with (1)
13 times of visitor use of the Class I area, and (2) the
14 frequency and timing of natural conditions that reduce
15 visibility." DE 104 at 152. On December 30, 2002, in
16 response to the December 18, 2002, FLM letter, Bull
17 Mountain submitted to the Department a case-by-case
18 analysis of each day of modeled visibility impact.
19 Uncontested Fact ¶ 27. In its case-by-case analysis, Bull
20 Mountain concluded that, on each of the days in question,
21 natural weather events had precluded visibility to the
22 point that the Project would not have adversely affected
23 visibility. Test. McVehil; Petitioners' Exhibit (PE) 3.
24 The Department requested the FLM to make a final
25 determination on adverse impacts. Test. Klemp. By letter
26 to the Department dated January 10, 2003, the FLM withdrew
27 the determination of adverse impact. Uncontested Fact ¶

1 28; Test. Walsh; DE 123. From the date of the issuance of
2 the PD, information was available to the public on the
3 potential visibility impacts in Class I areas. Test.
4 Klemp; BME 201 App. F.

5 (3) The Department has issued a second PD on only two
6 occasions. In one case, the second PD was issued at the
7 request of the applicant. In the other case an extended
8 EIS process took several years after issuance of the first
9 PD. Test. Klemp. Such reasons for issuing a second PD or
10 otherwise deviating from the normal timetable were not
11 established in this case.

12 b. **Conclusions of Law.** Under the Federal Clean Air
13 Act, Federal Land Managers (FLM) have responsibility to
14 protect visibility in mandatory Class I air quality areas.
15 42 U.S.C. § 7475. The Department complied with the
16 public participation requirements of the applicable rule,
17 ARM 17.8.826.

18 c. **Decision.** Petition ¶ 20 is dismissed.

19 34. **Petition ¶ 24.**

20 a. **Findings of Fact.** The Board finds, by the
21 preponderance of the evidence, that the conduct of the
22 Department with respect to Petition ¶¶ 18 and 20 was not
23 clearly erroneous, arbitrary and capricious, and an abuse
24 of discretion. Test. Klemp; Test. Walsh.

25 b. **Conclusions of Law.** The Montana Supreme Court
26 uses a three-step test to determine whether a lower
27 court's findings of fact are "clearly erroneous." First,

1 the Court reviews whether the findings are supported by
2 substantial evidence; second, if the findings are
3 supported by substantial evidence, whether the court
4 misapprehended the effect of the evidence; third, if the
5 findings are supported by substantial evidence and if the
6 court properly understood the evidence, whether the
7 Supreme Court has a definite and firm conviction that a
8 mistake has been made. E.g., Rieman v. Anderson (1997),
9 282 Mont. 139, 145, 935 P.2d 1122, 1125-26; Schaal v.
10 Flathead Valley Community College (1995), 272 Mont. 443,
11 446-47, 901 P.2d 541, 543. The Montana Supreme Court
12 defines "substantial evidence" as "evidence that a
13 reasonable mind might accept as adequate to support a
14 conclusion; it consists of more than a mere scintilla of
15 evidence but may be somewhat less than a preponderance."
16 S.L.H. v. State Compensation Mut. Ins. Fund, 2000 MT 362,
17 ¶ 42, 303 Mont. 364, 15 P.3d 948. The dictionary meanings
18 of "arbitrary" and of "capricious" are similar:
19 "arbitrary" means at random or by chance or without
20 reason; and "capricious" means impulsive and
21 unpredictable. Deciding a dispute based on the flip of a
22 coin is arbitrary and capricious. It is arbitrary because
23 a decision based on chance is not based on a reason
24 related to an understanding of the dispute. It is
25 capricious because the outcome is based on chance and thus
26 is unpredictable. The Montana Supreme Court has ruled
27 that to be arbitrary and capricious a decision "must

1 appear to be random, unreasonable or seemingly
2 unmotivated, based on the existing record." Silva v. City
3 of Columbia Falls (1993), 258 Mont. 329, 335, 852 P.2d
4 671, 675. Various federal courts have ruled that decisions
5 are "arbitrary or capricious" when the following
6 situations arise: (a) the decision is based on factors
7 not intended by the legislature to be considered; (b) the
8 decision entirely failed to consider an important aspect
9 of the problem; (c) the explanation for the decision is
10 contrary to the evidence; (d) the decision is so
11 implausible that it cannot be explained. E.g. Southwest
12 Ctr. for Biological Diversity v. United States Forest
13 Serv., 100 F.3d 1443, 1448 (9th Cir. 1996). The recurring
14 elements of a decision that is not "arbitrary or
15 capricious" are (1) that the agency examined the relevant
16 evidence and (2) articulated a satisfactory explanation
17 for its action, based on the evidence. "Abuse of
18 discretion" means acting without conscientious judgment or
19 exceeding the bounds of reason. Simmons Oil Corp. v.
20 Wells Fargo Bank, 1998 MT 129, ¶ 17, 289 Mont. 119, 960
21 P.2d 291.

22 c. **Decision.** Petition ¶ 24 is dismissed.

23 35. **Petition ¶¶ 25-26.** These paragraphs quote
24 federal law and state rule and require no decision by the
25 Board.

26 36. **Petition ¶¶ 27-35.**

27

1 a. **Findings of Fact.** The Board finds, by the
2 preponderance of the evidence, that the Department reached
3 the correct conclusion with respect to the Best Available
4 Control Technology (BACT) determination. However, the
5 Board does not agree with all aspects of the decision-
6 making process employed by the Department.

7 (1) BACT analysis is required for all Prevention of
8 Significant Deterioration (PSD) permits. With respect to
9 BACT, the Department considers the New Source Review
10 Workshop Manual (Draft October 1990) (NSR Manual) to be
11 authoritative guidance. The NSR Manual sets forth a top-
12 down five-step process. However, Montana has not adopted
13 rules that specify the BACT process that must be followed.

14 The Department does not require applicants to submit a
15 BACT analysis that has been prepared according to the NSR
16 Manual. The Department requires information from the
17 applicant needed to conduct a BACT analysis, and the
18 Department tries to follow the NSR Manual's top-down
19 approach for analyzing BACT. Test. Klemp; DE 101. The
20 Department's air quality permit application instructions
21 require applicants to provide a BACT analysis, but the
22 instructions do not require the top-down five-step
23 process. Test. Klemp; PE 52. Bull Mountain submitted a
24 BACT analysis, which referenced the NSR Manual and
25 purported to use as guidance the NSR Manual. BME 201 App.
26 C, DE 106. The Department required Bull Mountain to
27 submit additional BACT analysis. Test. Walsh. The

1 Department's permit analysis includes a summary of the
2 BACT analysis and of the Department's BACT determination.
3 Test. Klemp; Test. Walsh; BME 202, DE 127. The permit
4 analysis is not set forth according to the NSR Manual's
5 top-down five-step process. Test. Klemp; Test. Koucky.

6 (2) Briefly, the NSR Manual's process is as follows:

7 Step 1: Identify all control technologies.

8 Step 2: Eliminate technically infeasible control
9 options.

10 Step 3: Rank remaining control technologies by
11 control effectiveness.

12 Step 4: Evaluate most effective controls and
13 document results.

14 Step 5: Select BACT.

15 Test. Koucky; DE 101.

16 (3) Integrated gasification combined cycle (IGCC) and
17 circulating fluidized bed (CFB) combustion technologies
18 were not identified as control technologies in Bull
19 Mountain's BACT analysis or in the Department's BACT
20 determination. Test. Koucky. In response to comments,
21 Bull Mountain explained that IGCC and CFB would redefine
22 the source, which is not required by the NSR Manual. BME
23 214 at 2-4; Test. Snell. The Department also concluded
24 that IGCC and CFB would redefine the source. The
25 Department considered IGCC and CFB to be alternative
26 combustion processes and not control technologies for
27 pulverized coal (PC) fired boiler electric generating

1 plants. Test. Klemp; Test. Walsh. With respect to IGCC
2 the permit analysis states: "IGCC would involve re-
3 defining the project. In addition, IGCC is not a well-
4 established technology. The Department was unable to find
5 any examples of a regulating agency redefining a proposed
6 PC-fired boiler project with an IGCC, as part of a BACT
7 determination." BME 202, DE 127, Permit Analysis, at 11.
8 If IGCC were BACT, most of the Project would be changed.
9 The design of the power plant would be changed. There
10 would be no PC-fired boiler. Test. Koucky. Similarly, if
11 CFB were BACT, the design of the Project would be changed.
12 BME 214 at 2. With respect to this "redefining the
13 source" issue, the NSR Manual states: "Historically, EPA
14 has not considered the BACT requirement as a means to
15 redefine the design of the source when considering
16 available control alternatives. For example, applicants
17 proposing to construct a coal-fired electric generator,
18 have not been required by EPA as part of a BACT analysis
19 to consider building a natural gas-fired electric turbine
20" DE 101 at B.13. Recently, Wyoming considered
21 IGCC and CFB to be redefining the source when the proposal
22 was for a pulverized coal fired plant. BME 212, DECISION,
23 at II.B. On March 19, 2003, (after the DD was issued in
24 this case), Illinois informed the EPA that it had decided
25 that applicants for coal-fired power plants should
26 consider IGCC as part of the BACT analysis. Test.
27 Thompson; PE 8.

1 (4) IGCC is a technology for making coal into
2 synthetic gas. Sulfur, mercury, and other contaminants
3 are removed and the gas is burned to produce electricity.
4 Test. Thompson; PE 9. There are about 130 plants making
5 synthetic gas worldwide. Most of these plants produce
6 chemicals. Sixteen produce electricity and nine use coal
7 to produce electricity. Test. Thompson. Only two IGCC
8 power plants are operating in the United States and have
9 produced electricity from gas made from coal. No BACT was
10 done for these plants because they were Department of
11 Energy demonstration projects. Test. Koucky. The Wabash,
12 Indiana, plant used coal in the past but now uses
13 petroleum coke for economic reasons. The Polk, Florida,
14 plant is small. Test. Thompson. The Project manager was
15 the manager of an IGCC demonstration plant in the 1970's
16 and again looked at IGCC while Chief Operating Officer for
17 TVA in the 1990's. He concluded that IGCC is a chemical
18 plant technology that can secondarily generate
19 electricity, not a stand-alone electrical generation
20 technology. Test. Dickey. The environmental engineer who
21 was the primary author of Bull Mountain's BACT analysis
22 concluded that IGCC was redefining the source. Test.
23 Snell.

24 (5) With respect to CFB, the permit analysis stated
25 that CFB was better suited to poor quality fuel and
26 reduction in SO2 emissions would be largely offset by the
27 need to burn additional fuel to produce the same power

1 output. BME 202, DE 127, Permit Analysis, at 11. The
2 coal the Project would use is not poor quality fuel.
3 Test. Koucky. The Project is designed to be a high
4 availability source of electricity. The TVA had CFB
5 technology and found it was a high maintenance technology
6 that did not have high availability. CFB units are
7 smaller than the units planned for the Project. If CFB
8 technology were used, the Project would need to be
9 redesigned with three CFB units. Test. Dickey; BME 213 at
10 11. The environmental engineer who was the primary author
11 of Bull Mountain's BACT analysis concluded that CFB was
12 redefining the source. Test. Snell.

13 (6) Because the Department used the NSR Manual, it
14 should have included IGCC and CFB in Step 1 as control
15 technologies. Nevertheless, in reviewing the BACT
16 analysis for the Project, the Department gave substantial
17 consideration to IGCC and CFB combustion technologies.
18 The record supports the determination that these
19 technologies are not BACT. The outcome of Bull Mountain's
20 BACT analysis and the Department's BACT determination that
21 these technologies were not BACT was correct.

22 b. **Conclusions of Law.** The applicable definition of
23 BACT includes innovative fuel combustion techniques. ARM
24 17.8.801(6).

25 c. **Decision.** Petition ¶¶ 27-35 are dismissed. The
26 Department should propose the initiation of rulemaking to
27 adopt the top-down five-step method. In the future, the

1 Department should require applicants to consider
2 innovative fuel combustion techniques in their BACT
3 analyses and the Department should evaluate such
4 techniques in its BACT determination in accordance with
5 the top-down five-step method.

6 **37. Petition ¶ 36.**

7 **a. Findings of Fact.** The Board finds, by the
8 preponderance of the evidence, that the Department
9 considered, reviewed, and correctly rejected the use of a
10 circulating dry scrubber (CDS) for control of SO₂
11 emissions. Test. Klemp; Test. Walsh; BME 213 at 4-7; BME
12 202, DE 127, Permit Analysis, at 14.

13 **b. Conclusions of Law.** The BACT analysis and
14 determination were appropriate under ARM 17.8.801(6) and
15 other air quality rules.

16 **c. Decision.** Petition ¶ 36 is dismissed.
17

18 **38. Petition ¶ 37.**

19 **a. Findings of Fact.** The Board finds, by the
20 preponderance of the evidence, that the Department
21 considered, reviewed, and correctly rejected as not BACT
22 the use of cleaner fuels (lower sulfur coal) and fuel
23 blending. Test. Walsh; Test Snell; BME 202, DE 127,
24 Permit Analysis, at 11-12; BME 201 App. C at C-17 - C-18;
25 BME 214 at 12-13.

1 b. **Conclusions of Law.** The BACT analysis and
2 determination were appropriate under ARM 17.8.801(6) and
3 other air quality rules.

4 c. **Decision.** Petition ¶ 37 is dismissed.

5
6 39. **Petition ¶ 39.**

7 a. **Findings of Fact.** The Board finds, by the
8 preponderance of the evidence, that the Department
9 considered, reviewed, and correctly determined BACT for
10 NOx emissions. The Project proposes to use the NOx
11 control system that will achieve the greatest emission
12 reduction. No other PC-fired boiler has a lower NOx
13 limit. Test. Walsh; BME 202, DE 127, Permit Analysis, at
14 7-9; Test. Snell; BME 201 App. C at C-4 - C-12; BME 211-C.

15
16 b. **Conclusions of Law.** The BACT analysis and
17 determination were appropriate under ARM 17.8.801(6) and
18 other air quality rules.

19 c. **Decision.** Petition ¶ 39 is dismissed.

20 40. **Petition ¶ 40.**

21 a. **Findings of Fact.** The Board finds, by the
22 preponderance of the evidence, that the conduct of the
23 Department with respect to the BACT determination and the
24 consideration of available options (Petition ¶¶ 27-40) was
25 not clearly erroneous, arbitrary and capricious, and an
26 abuse of discretion. Test. Klemp; Test. Walsh; Test.
27 Hague.

1 b. **Conclusions of Law.** See ¶ 34b., herein, which is
2 hereby incorporated by reference.

3 c. **Decision.** Petition ¶ 40 is dismissed.

4 41. **Petition ¶ 42.**

5 a. **Findings of Fact.** The Board finds, by the
6 preponderance of the evidence, that the record contains a
7 rational basis for the emissions limitations and that the
8 Department's BACT determination was not clearly erroneous,
9 arbitrary and capricious, and an abuse of discretion.

10 Test. Klemp; Test. Walsh; Test. Hague; BME 202, DE 127; DE
11 128; BME 201 App. C; BME 211-C.

12 b. **Conclusions of Law.** See ¶ 34b., herein, which is
13 hereby incorporated by reference.

14 c. **Decision.** Petition ¶ 42 is dismissed.

15 42. **Petition ¶ 43.**

16 a. **Findings of Fact.** The Board finds, by the
17 preponderance of the evidence, that the Department
18 considered, reviewed, and correctly determined BACT for
19 SO2 emissions. A significant factor in the analysis and
20 determination of BACT for SO2 was technology that
21 conserved water. Test. Walsh; Test. Snell; BME 202, DE
22 127, Permit Analysis, at 10-15; BME 201, App. C at C-17 -
23 C-29; BME 214 at 9-10. The permit set a strict SO2
24 emission limit. Test. Snell; DE 127, Permit, Section
25 II.A.12; BME 211-C at 6-7.

1 b. **Conclusions of Law.** The BACT analysis and
2 determination were appropriate under ARM 17.8.801(6) and
3 other air quality rules.

4 c. **Decision.** Petition ¶ 43 is dismissed.

5 43. **Petition ¶ 44.**

6 a. **Findings of Fact.** In determining the control
7 efficiency for SO₂, the Department considered comments
8 from EPA, coal quality, and other coal boiler facilities.
9 The Board finds, by the preponderance of the evidence,
10 that Section II.A.13. of the Final Permit is not clearly
11 erroneous, arbitrary and capricious, and an abuse of
12 discretion. Test. Walsh; BME 202, DE 127, Permit
13 Analysis, at 15; DE 112, DE 128; BME 211-C; BME 213 at 12.

14
15 b. **Conclusions of Law.** The BACT analysis and
16 determination were appropriate under ARM 17.8.801(6) and
17 other air quality rules. See ¶ 34b., herein, which is
18 hereby incorporated by reference.

19 c. **Decision.** Petition ¶ 44 is dismissed.

20 44. **Petition ¶ 45.**

21 a. **Findings of Fact.** The reference in ¶ 45 of the
22 Petition to Section II.B.19 of the Permit is apparently
23 intended to be a reference to Section II.A.19. The
24 Department determined that control of SO₂ emissions was a
25 surrogate for control of H₂SO₄ emissions. The dry flue
26 gas desulfurization technology that was determined to be
27 BACT for SO₂ would also provide control of sulfuric acid

1 mist (H2SO4) emissions. The Department required
2 continuous monitoring of compliance with SO2 emission
3 limits. Emission limits for H2SO4 could be found for only
4 a small number of other coal boiler plants. Test. Walsh;
5 DE 127, Permit, Section II.B.4, Permit Analysis at 15, 17-
6 18; DE 128; BME 201 App. C at C-36 - C-37. The Board
7 finds, by the preponderance of the evidence, that the
8 Department considered, reviewed, and correctly determined
9 BACT for sulfuric acid mist emissions, but the
10 determination is incomplete because the Department did not
11 set an emission limit for sulfuric acid mist.

12 **b. Conclusions of Law.** The BACT analysis and
13 determination were appropriate under ARM 17.8.801(6) and
14 other air quality rules, but incomplete because no
15 specific emissions standard for sulfuric acid mist was
16 established.

17 **c. Decision.** The Board directs the Department to
18 establish a BACT emissions limitation for sulfuric acid
19 mist, based upon the record, and promptly add the emission
20 limit and appropriate compliance testing to the FP.

21 **45. Petition ¶ 46.**

22 **a. Findings of Fact.** The Board finds, by the
23 preponderance of the evidence, that the Department
24 considered, reviewed, and correctly determined BACT for
25 PM10 emissions. Test. Klemp; Test Walsh; BME 202, DE 127,
26 Permit Analysis, at 9-10; BME 201 App. C at C-12 - C-16;
27 BME 211-C at 6-7.

1 b. **Conclusions of Law.** The BACT analysis and
2 determination were appropriate under ARM 17.8.801(6) and
3 other air quality rules.

4 c. **Decision.** Petition ¶ 46 is dismissed.

5 46. **Petition ¶ 47.**

6 a. **Findings of Fact.** The Department did not include
7 opacity in its BACT determination because it did determine
8 BACT for PM10. Opacity and PM10 emissions are correlated
9 imperfectly. A facility may be in compliance with an
10 opacity limit but at the same time be in violation of its
11 PM10 emissions limit. However, a facility's violation of
12 its opacity limit may quickly help identify a failure of
13 PM10 control equipment. Test. Klemp. BME 202, DE 127,
14 Permit Analysis, at 9. The Petitioners did not prove that
15 an opacity limit more strict than the 20% opacity limit in
16 the permit would be BACT. Kentucky recently issued an air
17 quality permit for a PC-fired generating plant with a
18 particulate emissions limit of 0.018 lb/MMBtu (slightly
19 more than the 0.015 lb/MMBtu limit for the Project) with
20 an opacity limit of 20%. PE 27 at 2. The Board finds, by
21 the preponderance of the evidence, that the Department's
22 failure to establish an opacity limit in its BACT
23 determination was not clearly erroneous, arbitrary and
24 capricious, and an abuse of discretion.

25 b. **Conclusions of Law.** The BACT analysis and
26 determination were appropriate under ARM 17.8.801(6) and
27 other air quality rules. Opacity is not a pollutant and

1 is not required to be the subject of a BACT analysis and
2 determination. The opacity limit of 20% in the DD is
3 consistent with ARM 17.8.304. Petitioners had the burden
4 of producing evidence. Mont. Code Ann. §§ 2-4-612(2), 26-
5 1-401, 75-2-211(10). See ¶ 34b., herein, which is hereby
6 incorporated by reference.

7 c. **Decision.** Petition ¶ 47 is dismissed.

8 47. **Petition ¶ 48.** This paragraph quotes a state
9 rule and requires no decision by the Board.

10 48. **Petition ¶ 49.**

11 a. **Findings of Fact.** The Department had continuous
12 air monitoring data for PM10 for a period of three years,
13 1989-1992. A monitor is on a timer that collects samples
14 every sixth day. To obtain samples for 51-59 days per
15 year is a good result, particularly in a remote area. The
16 Department's meteorologist was familiar with the
17 conditions at the Project site, having visited the site
18 when the monitoring data were collected and more recently
19 after the Project was proposed. There have been no new
20 significant particulate emitting sources since the
21 continuous air monitoring data were collected. The
22 monitoring data are representative of ambient particulate
23 concentrations for the year preceding the application.
24 Test. Coefield. The Board finds, by the preponderance of
25 the evidence, that the Department's decision to use these
26 data was not clearly erroneous, arbitrary and capricious,
27 and an abuse of discretion.

1 b. **Conclusions of Law.** The data satisfied the
2 requirements of ARM 17.8.822. The data were "continuous
3 air monitoring data" as that term is used in ARM
4 17.8.822(6) and the data "represent the year preceding
5 receipt of the application." See ¶ 34b., herein, which is
6 hereby incorporated by reference.

7 c. **Decision.** Petition ¶ 49 is dismissed.

8 49. **Petition ¶ 51.** This paragraph quotes a state
9 rule and requires no decision by the Board.

10 50. **Petition ¶ 53.**

11 a. **Findings of Fact.** All available meteorological
12 data were used in the air quality modeling analyses. No
13 data were ignored. The project does not make a
14 significant contribution to PSD increment violations for
15 SO2 on the Northern Cheyenne Indian Reservation. Test.
16 Haller. On the days when computer modeling predicts
17 violation of SO2 increments on the Northern Cheyenne
18 Indian Reservation, the modeling showed that the
19 increments would be exceeded because of emissions from
20 Colstrip, which obtained a PSD permit from EPA in about
21 1979. Test. Klemp. The Board finds, by the preponderance
22 of the evidence, that the Department's decisions regarding
23 meteorological data used in air quality modeling analyses
24 were not clearly erroneous, arbitrary and capricious, and
25 an abuse of discretion.

26 b. **Conclusions of Law.** "The law never requires
27 impossibilities." Mont. Code Ann. § 1-3-222. It is an

1 unreasonable interpretation of ARM 17.8.802(1)(g) and
2 17.8.821 to require the use of meteorological data that do
3 not exist in a form usable for computer modeling. See ¶
4 34b., herein, which is hereby incorporated by reference.

5 c. **Decision.** Petition ¶ 53 is dismissed.

6 51. **Petition ¶ 57.**

7 a. **Findings of Fact.** The Department determined that
8 Project would not cause or contribute to violation of
9 national ambient air quality standards or exceedance of
10 PSD increments. The Department determined that the impact
11 of the Project was not significant. A determination about
12 significance is allowed by the NSR Manual and EPA policy,
13 although EPA has not adopted a rule. Test. Haller; DE 101
14 at C.52; DE 117 at 5; DE 103. The Board finds, by the
15 preponderance of the evidence, that the Department's
16 decisions regarding air quality modeling analyses and the
17 requirements of ARM 17.8.820 were not clearly erroneous,
18 arbitrary and capricious, and an abuse of discretion.

19 b. **Conclusions of Law.** The requirements of ARM
20 17.8.820 were met. See ¶ 34b., herein, which is hereby
21 incorporated by reference.

22 c. **Decision.** Petition ¶ 57 is dismissed.

23 52. **Petition ¶¶ 58-60.**

24 a. **Findings of Fact.** The project does not make a
25 significant contribution to PSD increment violations for
26 SO₂ on the Northern Cheyenne Indian Reservation. A
27 determination about significance is allowed by the NSR

1 Manual and EPA policy, although EPA has not adopted a
2 rule. Test. Haller; DE 101 at C.52; DE 117 at 5; DE 103;
3 DE 109; DE 111; BME 204-6; BME 206 at 6. On the days when
4 computer modeling predicts violation of SO2 increments on
5 the Northern Cheyenne Indian Reservation, the modeling
6 showed that the increments would be exceeded because of
7 emissions from Colstrip, which obtained a PSD permit from
8 EPA in about 1979. Test. Klemp. The Board finds, by the
9 preponderance of the evidence, that the Department's
10 analysis and decisions regarding SO2 increments at the
11 Northern Cheyenne Indian Reservation, and increments at
12 other Class I areas, and the requirements of ARM 17.8.820
13 were not clearly erroneous, arbitrary and capricious, and
14 an abuse of discretion.

15 b. **Conclusions of Law.** The requirements of ARM
16 17.8.820 were met. See ¶ 34b., herein, which is hereby
17 incorporated by reference.

18 c. **Decision.** Petition ¶¶ 58-60 are dismissed.

19 53. **Petition ¶ 62.** This paragraph quotes a state
20 rule and requires no decision by the Board.

21 54. **Petition ¶ 63.**

22 a. **Findings of Fact.** In its case-by-case analysis
23 of modeling, Bull Mountain concluded that, on each of the
24 days in question, natural weather events had precluded
25 visibility to the point that the Project would not have
26 adversely affected visibility. Test. McVehil; PE 3. By
27 letter to the Department dated January 10, 2003, the FLM

1 withdrew the determination of adverse impact. Uncontested
2 Fact ¶ 28; Test. Walsh; DE 123. The Board finds, by the
3 preponderance of the evidence, that the Department's
4 reliance on the January 10, 2003, letter of the FLM was
5 not clearly erroneous, arbitrary and capricious, and an
6 abuse of discretion.

7 **b. Conclusions of Law.** Under the Federal Clean Air
8 Act, Federal Land Managers (FLM) have responsibility to
9 protect visibility in mandatory Class I air quality areas.

10 42 U.S.C. § 7475. Montana recognizes that FLM have this
11 responsibility. ARM 17.8.825. See ¶ 34b., herein, which
12 is hereby incorporated by reference.

13 **c. Decision.** Petition ¶ 63 is dismissed.

14 55. **Petition ¶ 67.**

15 **a. Findings of Fact.** This paragraph is related to
16 ¶¶ 68-71. The Board granted the motions of the Department
17 and Bull Mountain for summary judgment on ¶¶ 68 and 71 and
18 Petitioners withdrew ¶¶ 69-70. Thus, ¶ 67 may be moot.
19 By granting summary judgment on ¶¶ 68 and 71, the Board
20 has ruled in favor of the Department and Bull Mountain as
21 a matter of law. Because the Board has already ruled that
22 the actions of the Department with respect to ¶¶ 68 and 71
23 were lawful, the Board has rejected the claim that the
24 Department's actions were clearly erroneous, arbitrary and
25 capricious, and an abuse of discretion.

26 **b. Conclusions of Law.** Petition ¶ 67 does not
27 survive the grant of summary judgment in favor of the

1 Department and Bull Mountain on ¶¶ 68 and 71. Mont. R.
2 Civ. P. 56. See ¶ 34b., herein.

3 c. **Decision.** Petition ¶ 67 is dismissed.
4 56. **Petition ¶ 73.**

5 a. **Findings of Fact.** On January 29, 2003, a few
6 days before the expiration of the deadline for the
7 Department's decision on the Project's permit application,
8 the Department received a letter from an "Acting Assistant
9 Regional Administrator" of EPA Region 8. The letter
10 explained that the Northern Cheyenne Tribe had requested
11 dispute resolution before the EPA Administrator under §
12 164(e) of the Federal Clean Air Act. The letter requested
13 DEQ to "hold off issuing a final PSD permit for the
14 Roundup Power Project." The letter also stated, "I know
15 that you must consider State statutory requirements in
16 weighing this request" Test. Klemp; DE 125. The
17 Department considered the request and the permit
18 processing deadlines imposed by Montana law and decided
19 not to "hold off" and issued the DD on January 31, 2003.
20 Test. Klemp; See Uncontested Fact ¶ 19. At the time of
21 the contested case hearing—more than four months after the
22 EPA request—no substantive discussions under § 164(e) had
23 occurred. Test. Klemp. The Board finds, by the
24 preponderance of the evidence, that the decision of the
25 Department not to "hold off" in issuing the DD was not
26 clearly erroneous, arbitrary and capricious, and an abuse
27 of discretion.

1 b. **Conclusions of Law.** Law and rule impose time
2 limits for the processing of air quality permits. Mont.
3 Code Ann. § 75-2-211; ARM 17.8.720 (through 12/30/02); ARM
4 17.8.759 (12/31/02). Section 164(e) of the Federal Clean
5 Air Act (42 U.S.C. § 7474(e)), does not supersede or
6 preempt state permitting deadlines or any other part of
7 the state permitting process. Section 164(e) is
8 independent of a state's permitting process and provides
9 no authority for a state to deny a permit application and
10 no authority to violate state permitting processes and
11 deadlines. See ¶ 34b., herein, which is hereby
12 incorporated by reference.

13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

c. **Decision.** Petition ¶ 73 is dismissed.

DATED this _____day of June, 2003.

BOARD OF ENVIRONMENTAL REVIEW

By: _____
JOSEPH W. RUSSELL, M.P.H.
Chairperson

1
2 **CERTIFICATE OF SERVICE**

3 I hereby certify that I caused a true and accurate
4 copy of the foregoing Findings of Fact, Conclusions of
5 Law, and Order to be mailed to:

6 Ms. Jennifer S. Hendricks
7 Meloy Law Firm
8 P.O. Box 1241
9 Helena, MT 59624

10 Mr. George E. Hays
11 236 West Portal Avenue, #110
12 San Francisco, CA 94127

13 Mr. David Rusoff
14 Legal Counsel
15 Department of Environmental Quality
16 1520 East Sixth Avenue
17 P.O. Box 200901
18 Helena, MT 59620-0901

19 Mr. J. Daniel Hoven
20 Ms. Sara B. Stanton
21 Browning, Kaleczyc, Berry & Hoven, P.C.
22 139 North Last Chance Gulch
23 Helena, MT 59601

24 DATED: _____
25 Joyce L. Wittenberg, Secretary
26 Board of Environmental Review
27